

## Publications, proceedings, and miscellaneous

### Refereed publications

- Nikulin, G., S. Asharaf, M.E., Magarino, S. Calmantie, R.M. Cardoso, J. Bhend, J. Fernandez, M.D. Frias, K. Fröhlich, B. Früh, S.H. Garcia, R. Manzanar, J.M. Gutierrez, U. Hansson, M. Kolax, M.A. Liniger, P.M.M. Soares, C. Sprig, R. Tome, and K. Wyser (2017): Dynamical and statistical downscaling of a global seasonal hindcast in eastern Africa, *Climate Services*, in press.
- Cheneka, B.R., S. Brien, K. Fröhlich, S. Asharaf, and B. Früh (2016): Searching for an added value of precipitation in downscaled seasonal hindcasts over east Africa: COSMO-CLM forced by MPI-ESM. *Advance in Meteorology*, accepted.
- Asharaf, S., and B. Ahrens (2015): Indian summer monsoon rainfall processes in climate change scenarios, *J. Climate.*, 28, 5414-5429.
- Asharaf, S., and B. Ahrens (2013): Soil moisture memory in the regional climate model COSMO-CLM during the Indian summer monsoon season. *J. Geophys. Res.*, 118(12), 6144-6151.
- Kumar, P., A. Wiltshire, C. Mathison, S. Asharaf, B. Ahrens, P. Lucas-Picher, J. H. Christensen, A. Gobiet, F. Saeed, S. Hagemann, and D. Jacob (2013): Downscaled climate change projections with uncertainty assessment over India using a high resolution multi-model approach, *Science of the Total Environment*, 468, 18-30.
- Asharaf, S., A. Dobler, and B. Ahrens (2012): Soil moisture-precipitation feedback processes in the Indian summer monsoon season. *J. Hydrometeor.*, 13, 1461-1474.
- Lucas-Picher, P., J.H. Christensen, F. Saeed, P. Kumar, S. Asharaf, B. Ahrens, A.J. Wiltshire, D. Jacob, and S. Hagemann (2011): Can regional climate models represent the Indian monsoon? *J. Hydrometeor.*, 12, 849–868.
- Asharaf, S., A. Dobler, and B. Ahrens (2011): Soil moisture initialization effects in the Indian monsoon system, *Adv. Sci. Res.*, 6, 161-165.
- Tripathi, J. N., S. Asharaf, and V. Singh (2011): Shallow seismic refraction survey in Allahabad city (UP), India, *Proc. Nat. Acad. Sci. India Sect. A*, 81A, 245-258.

### Extended abstracts / Research reports

- Nikulin et al. (2016): *Report on the added value of dynamical and statistically downscaled data* EUPORIAS report D21.2.
- Asharaf, S., B. Ahrens (2014): *The Indian Summer Monsoon Projections: Climate variability or Climate Change?* The Third International Regional-scale Workshop on 21st Century Challenges in Regional Climate modelling, 16-19 June, Lund, Sweden.
- Cheneka et al. (2014): *Potential Added Value of COSMO-CLM in simulating Extreme Precipitation over East Africa*, The Third International Regional-scale Workshop on 21st Century Challenges in Regional Climate modelling, June 16-19, 2014, Lund, Sweden.
- Asharaf, S., and B. Ahrens (2012): *Soil moisture sensitivity simulations over the Indian region*, Research Report Hochleistungsrechner in Hessen 2010/2011.
- Ahrens, B., and S. Asharaf (2012): *Soil moisture precipitation feedback processes in the Indian summer monsoon season*, OCHAMP, February 21-25, 2012, Pune, India.
- Asharaf, S., A. Dobler, and B. Ahrens (2010): *The Indian summer monsoon: precipitation -soil moisture feedback/recycling*, 3rd WMO International Conference on Quantitative Precipitation Estimation, Quantitative Precipitation Forecasting and Hydrology Nanjing, China, October 18-22, 2010.

Ahrens, B., A. Dobler, and S. Asharaf (2010): *Regional Climate Projections in Alpine River Basins: Upper Danube and Upper Brahmaputra*, Global Change and the World's Mountains, Perth, Scotland, UK, September 27-30, 2010.

Asharaf, S., A. Dobler, and B., Ahrens (2010): *Regional climate simulation over south Asia*, Research Report High-Performance Computing in Hessen 2009, March 29, 2010.

## Theses

Asharaf, S. (2016): *Land-Atmosphere Feedbacks in Indian Summer Monsoon Rainfall: A Regional Climate Modelling Perspective*, PhD Thesis, Institute for Atmospheric and Environmental Sciences, Goethe University, Frankfurt am Main.

Asharaf, S. (2008): *Mesoscale simulation of severe thunderstorm over Gangetic West Bengal – representation of cloud microphysics*, M.Tech. Thesis, Centre for Ocean, River, Atmosphere, and Land Sciences, Indian Institute of Technology, Kharagpur, India.

Asharaf, S. (2006): *Shallow seismic refraction survey in Allahabad city (U.P.), India*, M.Sc. Thesis, Department of Earth and Planetary Sciences, Allahabad University, Allahabad, India.

## Conference proceedings

Asharaf, S., D. E. Waliser, C. Chidong, and A.W. Putra (2017): CYGNSS surface wind validation in the maritime continent, *CYGNSS Science Team Meeting*, December 18-19, 2017, NOAA/AOML Miami, USA. (Oral presentation)

Asharaf, S., D. E. Waliser, C. Chidong, and A.W. Putra (2017): CYGNSS surface wind validation and characteristics in the maritime continent, *American Geophysical Union (AGU)*, December 11-15, 2017, New Orleans, USA. (Poster presentation)

Asharaf, S., K. Fröhlich, J. Fernandez, R. M. Cardoso, G. Nikulin, B. Früh, and the EUPORIAS East Africa Team (2016): Performance of dynamically downscaled ensemble seasonal forecasts over East Africa, *CORDEX 2016*, May 17-20, 2016, Stockholm, Sweden. (Poster presentation)

Asharaf, S., K. Fröhlich, J. Fernandez, R. M. Cardoso, G. Nikulin, B. Früh, and the EUPORIAS East Africa Team (2016): Dynamically downscaled multi-model ensemble seasonal forecasts over Ethiopia, *European Geosciences Union General Assembly (EGU)*, April 17-22, 2016, Vienna, Austria. (Oral presentation)

Asharaf, S., B. Ahrens (2016): Land–Climate Feedbacks in Indian Summer Monsoon Rainfall, *European Geosciences Union General Assembly (EGU)*, April 17-22, 2016, Vienna, Austria. (Poster presentation)

Asharaf, S., K. Fröhlich, J. Fernandez, R. M. Cardoso, G. Nikulin, B. Früh, and the EUPORIAS East Africa Team (2016): Performance of dynamically downscaled ensemble seasonal forecast over east Africa, *COSMO/CLM User Seminar*, March 7-9, 2016, Offenbach am Main, Germany. (Oral presentation)

Ahrens, B., S. Asharaf (2014): Influence of anthropogenic forcing and the inherent feedback processes on the Indian summer monsoon, *European Geosciences Union General Assembly (EGU)*, April 27- May 02, 2014, Vienna, Austria. (Oral presentation)

Asharaf, S., B. Ahrens (2014): The Indian Summer Monsoon Projections: Climate variability or Climate Change? *The Third International Regional-scale Workshop on 21st Century Challenges in Regional Climate modelling*, June 16-19, 2014, Lund, Sweden. (Poster presentation)

Ahrens, B., S. Asharaf (2013): Soil-moisture memory during the Indian summer monsoon season as simulated by the Regional Climate Model COSMO-CLM, *CORDEX Regional Climate Models Performance in Present-day Climate for South Asia*, Nov. 4-7, 2013, Brussels. (Poster presentation)

- Asharaf, S., and B. Ahrens (2013): Soil moisture precipitation feedback processes over the Indian sub-continent as simulated by the regional climate model COSMO-CLM, *COSMO/CLM User Seminar*, March 5-7, 2013, DWD, Offenbach/Main, Germany. (Poster presentation)
- Asharaf, S. (2012): Soil moisture precipitation feedback processes in the Indian summer monsoon season, *IAU/GUF seminar*, December 13, 2012, Frankfurt, Germany. (Oral presentation, *invited*)
- Asharaf, S., and B. Ahrens (2012): Soil moisture memory in a regional climate model for the Indian summer monsoon season, *12<sup>th</sup> EMS Annual Meeting & 9<sup>th</sup> European Conference on Applied Climatology (ECAC)*, September 10-14, 2012, Lodz, Poland. (Oral presentation)
- Ahrens, B., and S. Asharaf (2012): Variability, climate change or drift in the Indian summer monsoon as simulated by the regional climate model COSMO-CLM. *International workshop on interdecadal variability of the global monsoons*, September 10-12, 2012, Nanjing, China. (Oral presentation)
- Ahrens, B., and S. Asharaf (2012): Soil moisture precipitation feedback processes in the Indian summer monsoon season, *OCHAMP*, February 21-25, 2012, Pune, India. (Oral presentation)
- Asharaf, S., and B. Ahrens (2011): Influence of pre-monsoonal soil moisture on the Indian summer monsoon precipitation, *11<sup>th</sup> EMS Annual Meeting / 10<sup>th</sup> European Conference on Applications of Meteorology (ECAM)*, September 12-16, 2011, Berlin, Germany. (Oral presentation)
- Asharaf, S., A., Dobler, and B. Ahrens (2011): Indian summer monsoon onset sensitivity on soil moisture, *COSMO/CLM User Seminar*, March 1-4, 2011, BTZ Langen, Germany. (Oral presentation)
- Hagemann, S., P. Kumar, D. Jacob, S. Asharaf, and B. Ahrens (2010): Regional climate simulations over India, *EU project WATCH General assembly*, November 2010, Amsterdam, Netherlands. (Oral presentation)
- Asharaf, S., A. Dobler, and B. Ahrens (2010): The Indian summer monsoon: precipitation -soil moisture feedback/recycling, *3<sup>rd</sup> WMO International Conference on Quantitative Precipitation Estimation, Quantitative Precipitation Forecasting and Hydrology Nanjing*. China, October 18-22, 2010. (Oral presentation)
- Ahrens, B., A. Dobler, and S. Asharaf (2010): Regional Climate Projections in Alpine River Basins: Upper Danube and Upper Brahmaputra, *Global Change and the World's Mountains*, Perth, Scotland, UK, September 27-30, 2010. (Oral presentation)
- Asharaf, S., A. Dobler, and B. Ahrens (2010): Soil moisture initialization effects in the Indian monsoon system, *10<sup>th</sup> EMS Annual Meeting / 8<sup>th</sup> European Conference on Applied Climatology (ECAC)*, September 13-17, 2010, Zurich, Switzerland. (Oral presentation)
- Lucas-Picher, P., J.H. Christensen, P. Kumar, F. Saeed, S. Asharaf, A. Wiltshire, B. Ahrens, and S. Hagemann (2010): Evaluation of the Indian monsoon generated by four regional climate models during the period 1981-2000, *10<sup>th</sup> EMS Annual meeting, 8<sup>th</sup> European Conference on Applied Climatology*, Zurich, Switzerland, September 13-17, 2010. (Oral presentation)
- Asharaf, S., B. Ahrens, and A. Dobler (2010): Regional climate simulation over India, *COSMO/CLM User Seminar*, March 2-4, 2010, BTZ Langen, Germany. (Oral presentation)

## External research and training

- 05/2016: ECMWF Training Course on Predictability and ocean-atmosphere ensemble forecasting, ECMWF, Reading, UK.
- 09/2014: Seasonal forecasting and downscaling (workshop), Santander, Spain.
- 10/2013: KMA-WMO Training Workshop on Producing High Resolution Climate Information (training / workshop), Seoul (KMA) & Busan (APEC), S. Korea.
- 04/2013: High performance computing workshop, TU Darmstadt, Germany.
- 03/2009: COSMO/CLM Training, Langen, Germany.

**Computer skills**

- Working experience on LINUX / UNIX / Mac OS systems
- High-performance computing (e.g., CRAY, AIX IBM) on parallel environment, 2009-2016
- Working experience of FORTRAN
- Working experience of R, GMT, Linux/Unix shell script

**Research experiences / interests**

- Land-Atmosphere-Ocean interaction
- Soil moisture-Precipitation feedback processes
- Regional climate modeling
- Monsoons
- Memory and extreme events
- Seamless prediction / projection / verification
- Water cycle and climate variability
- Ensemble statistical verification (probabilistic / deterministic)
- Satellite / in-situ data analysis

**Regional Climate / Weather Model experience**

- COSMO-CLM, MM5

**Reviewer activity**

- *Meteorology and Atmospheric Physics, Theoretical and Applied Climatology, International Journal of Climatology, Journal of Hydrometeorology, Climate Dynamics, International Journal of Atmospheric Sciences, Transaction of the ASABE, Journal of Geophysical Research, Natural Hazards, Atmospheric Research, Dynamics of Atmospheres and Oceans*

**Professional body member**

- AGU (since 2017)
- EGU (2016)
- CLM-Community (2009-2016)

**Project involved**

- CYGNSS surface wind analysis (UCLA PI, 01/2018-12/2018)
- European Provision of Regional Impacts Assessments on Seasonal and Decadal Timescales (EUPORIAS, WP21.2) 2013-2016
- Water and Global Change (WATCH, WP3) during 2009-2011 (Associate partner)
- CORDEX South Asia (COSMO-CLM downscaling experiment)

**Language known**

- Hindi (native), English, Urdu, German (elementary)

# Curriculum Vitae

## Personal Data

Shakeel Asharaf  
Born in Kushinagar, India  
Nationality: Indian  
Contact address: NASA's Jet Propulsion Laboratory (JPL)  
M/S 233-304, 4800 Oak Grove Drive  
Pasadena, CA 91109  
USA  
Tel: +1-(818)393-5358 e-mail: shakeel.asharaf@jpl.nasa.gov

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## Education

- 03/2016: **PhD** (Geosciences, *Magna cum laude*), J. W. Goethe University (GUF), Frankfurt/Main, Institute for Atmospheric and Environmental Sciences, Germany  
Theme: Land-Atmosphere Interaction  
Thesis Title: *Land-Atmosphere feedbacks in Indian summer monsoon rainfall: a regional climate modeling perspective*  
Advisor: Bodo Ahrens, Goethe University, Frankfurt, Germany
- 07/2008: **M.Tech.** (Earth System Science & Technology), Indian Institute of Technology (IIT), Kharagpur, India  
Degree: Master of Technology (M.Tech.)  
Thesis Title: *"Mesoscale simulation of severe thunderstorm over Gangetic West Bengal-representation of cloud microphysics"*  
Advisor: M. Mandal (late), IIT Kharagpur, India
- 07/2006: **M.Sc.** (Applied Geology), Allahabad University, Allahabad, India  
Degree: Master of Science (M.Sc.)  
Thesis Title: *"Shallow seismic refraction survey in Allahabad city (U.P.), India"*  
Advisor: Jayant N. Tripathi, Allahabad University, India
- 06/2004: **B.Sc.** (Math, Physics, and Chemistry), Allahabad University, Allahabad, India  
Degree: Bachelor of Science (B.Sc.)

## Scientific Position

- 11/2017 – present **Postdoctoral Researcher** at JPL through University of California Los Angeles (UCLA), USA  
Project involved: CYGNSS, PISTON  
Theme: Multi-scale interaction between Maritime continent and Intraseasonal oscillation through observations (satellite, ship tracks, buoys and ground based in-situ) and models  
Advisor: Duane E. Waliser, JPL
- 07/2013 – 09/2016 **Research Scientist**, German Weather Service (DWD), Offenbach/Main, Germany  
Project involved: EU-Project "EUPORIAS" (<http://www.euporias.eu/>)  
Theme: Seasonal hydrological extremes (drought and floods) forecasting in eastern Africa  
Advisor: Barbara Frueh, DWD
- 12/2008 – 07/2013 **Researcher**, J. W. Goethe University, Frankfurt/Main, Germany  
Theme: Land-Atmosphere interaction and regional water cycle in India  
Teaching assignment: Numerical Weather Prediction (exercise course during the winter semester, 2009, 2010, 2011) for M.Sc. at Goethe University, Frankfurt, Germany  
Advisor: Bodo Ahrens, GUF

## Additional Information / Award

- 2006 Qualified Graduate Aptitude Test in Engineering (GATE) – 2006 with All India Rank 92
- 2006 - 2008 Awarded assistantship at IIT Kharagpur (2006-2008) by HRD Ministry Govt. of India
- 2013 Awarded funding from World Meteorological Organization (WMO) to attend the international training course on producing high resolution climate information: scientific basis and application, Seoul, S. Korea from 13 to 24 October 2013